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Note generali	"Contributions presented during the 2004 Summer Course on 'Transport in Geophysical and Environmental Flows'"--Pref.
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Nota di contenuto	Theory -- Scalar Decay in Chaotic Mixing -- Transport of Inert and Reactive Particles: Lagrangian Statistics in Turbulent Flow -- Diffusion and Reaction–Diffusion in Steady Flows at Large Péclet Numbers -- An Introduction to Radiative Transfer for Geophysicists -- Coherent Vortices and Tracer Transport -- Experiments and Observations -- Dispersion and Mixing in Quasi-two-dimensional Rotating Flows -- Quantifying Inhomogeneous, Instantaneous, Irreversible Transport Using Passive Tracer Field as a Coordinate -- Lagrangian Statistics from Oceanic and Atmospheric Observations -- The Modulation of Biological Production by Oceanic Mesoscale Turbulence.
Sommario/riassunto	This volume collects a number of theoretical and experimental lectures on various aspects of transport and mixing of active and passive particles in geophysical flows. Transports in fluids can be approached from two complementary perspectives: in the Eulerian view of mixing, the focus is on the concentration field - advection stetches and folds the concentration field and sharpens the gradients, while diffusion smoothes the field. In the Langrangian view, fluid parcels are followed around as they move with the flow, experiencing chaotic or stochastic motion. Both pictures are considered in the present lectures, with passive particles carried freely by the flow and reactive particles, where

chemically or biologically induced reactions change the character of the particles.